

is to be formed during the pinch seal, a sufficient pinching pressure can be applied to the tungsten electrode up to a portion close to the tip portion thereof. Consequently, since the volume of the almost wedge-shaped slit formed on both ends in the axial direction of the discharge space can be reduced, the amount of the metal halide deposited on the slit can be decreased. As a result, the change of the light emitting color of the arc tube and the generation of lighting failures can be suppressed effectively.

#### Brief Description of the Drawings

[0018]

Fig. 1 is a side sectional view showing a discharge bulb having an arc tube according to an embodiment of the invention incorporated therein,

Fig. 2 is an enlarged view showing a II portion in Fig. 1,

Fig. 3 is a sectional view taken along the line III - III in Fig. 2,

Fig. 4 is a view seen in a direction of IV in Fig. 2,

Fig. 5 is a sectional view taken along the line V - V in Fig. 4,

Fig. 6 is a sectional view taken along the line VI - VI in Fig. 4,

Fig. 7 is a perspective view showing a pinch seal step of forming a pinch seal portion on the front side of the arc tube,

Fig. 8 is a sectional plan view showing the pinch seal step,

Fig. 9 is a sectional plan view showing a shrink seal step to be carried out before the pinch seal step,

Fig. 10 is a view showing a main part of Fig. 3 in detail,

Fig. 11 is a chromaticity diagram showing the result of an experiment carried out to confirm the performance of the arc tube according to the embodiment, and

Fig. 12 is a view showing a conventional example of an arc tube.

#### Detailed Description of the Invention

[0019]

Embodiments of the invention will be described below with reference to the drawings. Fig. 1 is a sectional side view showing a discharge bulb 10 having an arc tube according to an embodiment of the present invention, and Fig. 2 is an enlarged view showing a II portion. Fig. 3 is a sectional view taken along the line III - III in Fig. 2.